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This hinders the progress of medical science and therefore hinders economic progress. To popularize western medicine 'it is not enough to multiply facilities (however good in themselves) for the treatment of such as apply for relief'.[1] In homogeneous western societies the improvement of medical facilities is a problem of supply; the demand for better medical care is almost unlimited, and the extension of medical relief depends upon the provision of larger funds and a better organization for meeting the demand. But in the plural society of the tropics the problem is one of demand; it is a waste of money to provide medical assistance for which there is no demand. Apart from compulsion, it is first necessary to organize the demand. That is a difficult matter. The appreciation of western medicine, as of co-operative principles, must ordinarily spread slowly, but disease, like debt, spreads daily. The machinery of co-operative credit without the spirit has proved useless or worse than useless, but the machinery of medical attention may seem to offer more scope for compulsion. Tropical diseases are a mass affliction, and their rapid elimination is necessary both to native welfare and to economic progress. Hence it is argued that the treatment 'to be effective must partake to some extent the character of an operation, scientifically planned and humanly conducted, but military in its spirit and in the thoroughness with which it establishes itself in the area which it has occupied'. Thus the provision of medical assistance tends to be transformed from the promotion of *individual* welfare, requiring voluntary co-operation, into the promotion of *social* welfare by compulsion, the method which is characteristic of hygiene.

3. HYGIENE

Even in Europe it was only during the last half of the nineteenth century that men came to regard the state as responsible for public health and for the prevention of disease, and a growing volume of welfare legislation marked the earlier stages of the transition from a policy of *laissez-faire* to one of efficiency and social justice. The new trend of opinion naturally reacted on colonial policy. In India, although the growth of towns consequent on the development of trade had long compelled attention to conservancy, sanitation was not treated seriously until 1863, when a Royal Commission showed that the insanitary condition of urban areas was intimately connected with ill-

[1] *African Survey*, pp. 1115, 1196; *Social Policy in Dependent Territories* (1944), p. 6.

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health in the army.[1] Even then the action taken was not every effective, and in rural areas practically nothing was attempted. In Netherlands India the Dutch, with their tradition of civic cleanliness, had been more active from very early days, and the first police regulations, framed for Sourabaya in 1829, required every one to tidy up his compound daily, and twice a day if along a public road. Van den Bosch extended these rules over the whole of Java, and it has been stated that a regular health service existed from the middle of the century.[2] The cleanliness of the villages in Java, as compared with the tropics generally, has often attracted favourable comment from visitors. But under Dutch rule, as elsewhere in the tropics, it is only during the present century that the care for public health has been placed on a scientific basis. Naturally it was in the larger towns with a considerable European population that the new concern for hygiene first took effect. The outbreak of plague in India and the Tropical Far East stimulated greater activity, though for the most part this did not extend beyond the towns. Gradually with the growth of western enterprise a new factor intervened, for the mines and plantations were situated in the interior, and attracted attention to the need for improving rural hygiene.

In Burma the epidemic of plague was the immediate occasion for the appointment of a Sanitary Commissioner and the creation of a Public Health Department, but, as in Java and Africa, the earlier measures to prevent plague tended on the contrary to spread infection. In Burma western enterprise is comparatively insignificant, and the activities of the Department have not been extended to the villages. In Malaya, however, where western enterprise dominates economic life, the public health service made greater progress, and, for various reasons, the course of affairs in Malaya is especially instructive. The Straits Settlements have been business centres for over a hundred years and suffered from the former disregard of public health, so that in Singapore 'immense sums have had to be spent to undo the damage caused by the *laissez-faire* policy of the nineteenth century'.[3] But the Malay States remained almost untouched by western enterprise during the nineteenth century:

'Their economic development and rapid increase of population roughly coincided with the growing realization of the necessity for public health measures. About the same time came the series of discoveries of the cause

[1] *IG*, iv, 286, 467.
[2] Hydrick, p. 7
[3] Mills, p. 298.

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and prevention of tropical disease which revolutionized or rather created the science of tropical medicine. The Malay States were able to take advantage of this situation without having first to spend large sums in remedying the effects of previous indifference. Tin, and later, rubber provided revenue on a scale which many older colonies lacked; and the administration was generous and far-sighted in its expenditure.'[1]

Moreover, in comparison with many tropical dependencies, the area of the Malay States is small, and the population, though not dense, is mainly concentrated in certain areas, and therefore the people as a whole are readily accessible. The local Sultans are men educated on modern lines, who can appreciate western medicine and can use their influence to recommend it to their people. Probably there is no region in the tropics where conditions are so favourable to the improvement of public health as in the Malay States.

As we have noticed, the rural population is said formerly to have enjoyed general good health. Tuberculosis was almost unknown until fostered by the congestion in the towns consequent on economic development. Similarly venereal diseases have multiplied with the mass importation of male coolies. The rice plains, in which most of the people lived and worked, 'were practically free from malaria'.[2] But when mines and rubber land were opened up to western enterprise, malaria was a formidable obstacle. Klang, the station at the coastal end of the railway to the mines, was very malarious, and the adjacent shipping centre, Port Swettenham, was so deadly that the Government directed its abandonment. But campaigns against malaria proved successful at both these places, and were extended to other towns.[3] At that time rubber plantations were being laid out, and malaria took a heavy toll among both Europeans and coolies, 'as high as one-fifth of the labour force'. Measures for the prevention of malaria were accordingly extended from the towns to rural areas. In 1910 a separate Health Branch of the Medical Departments was established to supervise anti-malarial and other health work in the interior, but its operations were hindered by the lack of adequate control over labour conditions. In 1912 accordingly the numerous separate ordinances for different classes of immigrants were consolidated in a Labour Code, which has since then regulated the conditions of labour on the plantations and mines. 'In earlier years some managers opposed the "interference" of the Health Branch, and failed to realize the

[1] Mills, p. 298.
[2] *Ib.* p. 301.
[3] *Ib.* pp. 299ff., 328.

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economic value of maintaining their labourers in good health.' The opposition, however, had some justification, as the measures that had proved efficacious in preventing malaria in the towns, had a contrary effect on the plantations, and 'resulted merely in heavy expenditure and increased mortality'. Patient research discovered and removed the defects, and by 1935 the protection against malaria was as complete on the larger estates as in the towns.[1] Another disease that has received special attention is hookworm. This is generally prevalent, and a special element of contagion exists in the Indian estate labourers, among whom a high percentage are infected, despite the treatment given to immigrants at the quarantine stations. It is not serious in itself, but it causes physical and mental fatigue, and consequently reduces the efficiency of labour. Strict provisions in the Labour Code regulated sanitary conditions on the plantations, but they were sometimes disregarded, especially on Indian properties. A campaign against the disease from 1926 to 1929, partly financed by the Rockefeller Foundation, effected a temporary improvement, but probably its chief permanent value was to direct renewed attention to the importance of rural sanitation. The Government decided accordingly to enlarge the health service, to enforce the Labour Code more strictly on estates, to provide sanitary latrines in rural schools and other Government buildings, and to persuade the villagers to build latrines and wear shoes.[2]

The beneficent activities of the public health service have gained the confidence of European employers, who now recognize its value in improving the health and enhancing the efficiency of their employees, and many provide hospitals and other amenities in excess of official requirements. But 'many Asiatic-owned plantations frequently evade the regulations, and have to be closely supervised by the Health Branch. They are a menace to their neighbours who have obeyed the regulations'. Yet the chief difficulty has been among the villagers, who 'are the worst offenders against the anti-malarial and other health measures and require constant supervision'.[3] They can be compelled or encouraged to build latrines, but, as has been found also in Java and Ceylon, they cannot be compelled to use them. In the towns shoes are a sign of higher social status, and every one wears them who can afford the money, but Government pressure has met with little success in inducing the villagers to wear shoes, which

[1] Mills, pp. 225, 234, 299, 300.
[2] *Ib.* 234, 316, 17.
[3] *Ib.* pp. 234, 316–17; *Netherlands India*, p. 363.

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744 indeed are hardly suited to the cultivation of rice in mud and water. Much of the expenditure incurred in improving conditions on western enterprise is wasted if the adjacent villages continue to be sources of infection. But 'the Health Branch has to contend against the dead weight of a naturally indifferent and insanitary population' that, perversely, enjoyed 'general good health' without their attentions. Constant inspection is costly, and penalties are apt to raise the pitch of corruption rather than the standard of health. Even in a wealthy dependency with conditions so generally favourable as in Malaya, it has not been possible to do much towards improving the health of the ordinary villager.[1]

744 165 Yet one finds Malaya cited as 'one instance where the whole population benefited from medical and health organization assisted by economic development',[2] and it may be well to examine the evidence more closely. According to the Census Report on Malaya for 1931 the death-rate for Malaysians was 22·4 per 1000, for Chinese 24·3 and for Indians 29·8.[3] Since Malaysians receive least attention from the health service, it would seem that its activities play a minor part in reducing the bills of mortality. In Burma for the same year the provincial death-rate was returned as 17·36 and for rural areas, where western medicine and hygiene are practically inoperative, the death-rate, according to the official returns, was only 15·87.[4] But in Burma the apparently low death-rate was explained as due in part to 'slackness in registration', and this probably holds true also of Malaysians. It has been claimed that, in Malaya, 'the fall in infantile mortality is one of the best indications of what has been accomplished'.[5] Of recent years there has indeed been a marked downward trend in the figures, and this has coincided with greater activity in welfare work. In the Federated Malay States, the recorded death-rate for infants under twelve months fell from 218 per 1000 births in 1917 to 147 in 1937, and in the Straits Settlements during the same period it fell from 267 per 1000 to 156. But the first result of greater attention to vital statistics is an improvement in registration, and 'there is unfortunately no doubt that, even in such an area as Singapore Municipality, registration of births has up to quite recent years been very far from complete, and that even to-day it leaves a good deal to be desired'. The failure in registration in Singapore was estimated

[1] Mills, pp. 314–16, 320.
[2] *Social Policy in Dependent Territories* (1944), p. 6.
[3] Malaya Census, 1931, p. 10.
[4] *RAB*, 1931–2, p. 130.
[5] Mills, p. 328.

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at 10 % in 1931, over 20 % in 1921 and over 35 % in 1911; yet 'the relevant statistics for Singapore are probably the best available'.[1] Death registration, however, is far more complete than birth registration, and it is certain that no inconsiderable part of the apparent decline of infantile mortality must be ascribed to the more accurate registration of births rather than to the attention to child welfare. Here, again, the figures for Burma are suggestive. In 1931 child welfare work did not extend beyond the towns, but the infantile mortality rate in rural areas was returned as 178 per 1000, whereas the corresponding figure for urban areas was 277. These figures may not prove that most children die where they receive most attention, but they do at least suggest a need for caution in accepting the figures for infantile mortality in Malaya as proof of the benefits accruing from the health service. If those figures are 'the best indication of what has been accomplished', it is unsound, in the face of evidence to the contrary, to conclude that the whole population has benefited.

In Malaya attention was directed to public health by the needs of private enterprise, and by the spread of disease as a result of economic development. European employers often go beyond the official minimum, and expenditure on the enforcement of regulations, as distinct from the provision of amenities, is chiefly incurred on western enterprises managed by non-Europeans, who cannot afford to comply with them or do not believe in them. Experience shows that the problem of improving the standard of health and the efficiency of labour on mines and plantations is ultimately linked up with the improvement of health among the people in general. But an improvement in the general standard of health among the people would seem to require that they shall comply with regulations in which they have no faith, and voluntarily accept rules which they are unable to obey and which the government is equally unable to enforce. In Singapore, as in Rangoon, conditions preclude the enforcement of the housing by-laws.[2] Where ill-health is the direct result of economic circumstances, the remedy lies not in legislation but in changing the environment. To most reforms, however, the chief obstacle is apathy. Without a change of attitude, expenditure on a health service as an instrument of welfare, or even as an instrument of economic progress, is largely wasted; given a change of attitude, most of the urgent reforms could be effected without spending large sums on a public health service, because common sense is sufficient to recommend

[1] Malaya Census, 1931, pp. 106, 108.

[2] Mills, p. 321 n.

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them. Where improvements call for more than common sense, experts insufficiently acquainted with tropical hygiene as applied to local conditions are apt to make mistakes, as in the first attempts to prevent malaria in rural areas and to combat plague, and such failures tend to confirm people in their apathy.

Although Malaya has features of special interest, experience in Asia generally points to similar conclusions, and so it does likewise in Africa. The growth of modern views in Europe on the relation between environment and disease, and on the responsibility of the State for public health, 'coincided with the very general recognition that measures which lead to an improvement in health and an increase in population are likely to have a direct influence on African economics'.[1] The larger industrial concerns have in some areas anticipated recognition by the administrations of the need for extending public health measures. 'They have realized that, low paid as the African may be, an ailing and inefficient employee is expensive and wasteful.' 'Experience has shown that efficiency is closely linked with health conditions, and the more important organizations have now adopted, with satisfactory results, the practice of giving a period of "acclimatization" by medical treatment and dieting before the recruit begins active work.' This expenditure could be avoided if the people in general enjoyed better health. Moreover, owing to the generally low standard of health, labour was not only inefficient but deficient. Attention has frequently been drawn to 'the wastage of labour due to ill-health', and a recent committee in Tanganyika suggested that 'with the elimination of waste there is ample man-power for the needs of the territory, both for wage-earning and in the growing of economic crops'.[2] But in most regions much of the labour comes from a long distance, and a solution for the problem of making it more efficient 'lies not merely in attention to the health conditions of employed labour, but in intensive medical work and the promotion of improved standards of subsistence cultivation in the areas from which labour is drawn'. 'In some areas concentration on economic exploitation has resulted in enormous labour migrations which have not only drained the native reserves of the menfolk, needed for subsistence agriculture and a balanced life, but at the other end have brought into existence a dingy, discontented, "atomized" black proletariat which, on any standard of ultimate human values, represents a regression from traditional tribal standards.'[3] In Africa as in Asia, unregulated

[1] *African Survey*, pp. 697, 1194. [2] *Ib.* pp. 693, 697. [3] Huxley, p. 121.

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economic development tends to spread disease and foster ill-health; the more enlightened employers recognize the need for measures to improve the health of their labourers, and support the Government in taking steps to enforce similar measures on other employers; and attempts to raise the standard of health on western enterprise bring to light the need to raise the standard of health among the great mass of the people.

One aspect of this problem is nutrition. It is now recognized that in lands developed by native enterprise, cultivation for export tends to grow at the expense of cultivation for food, and it seems that during recent years, even where food grains constitute the staple export, less has been available for local consumption.[1] Moreover, the expansion of cultivation deprives the people of spontaneous products of the waste, formerly used to supplement their diet. Naturally problems of nutrition engage most attention where the profits of western enterprise are closely linked with the supply of food. We have noticed that in Malaya the loss to the Government and employers occasioned by the shortage of rice after the war of 1914 led to renewed insistence on the compulsory cultivation of rice. Especially in Africa the inefficiency of native labour is regarded as largely due to inadequate or unsuitable diet, and so 'nutritional problems are now much in the minds of administrations: whether the African eats enough food and, if he does, whether it is the right kind, and whether the attack on nutrition may not be the most important factor in reducing disease'. In the past Africans have adopted new kinds of food, but whether they will be so willing to accept the advice of dieticians would seem doubtful. In Malaya where the polished rice that has recently gained favour is regarded as a cause of beri-beri, attempts to induce the people to revert to roughly husked rice appear to have had little more success than the propaganda for standard bread in England, and it is unlikely that the African will be more responsive. It is unlikely also that the African will be able to afford more nutritious food, if it is more costly; normally, as we have noticed, in the process of economic development, cheap food drives out good food. Moreover, dietetics is a new science, and 'some African tribes seem to maintain physical fitness on food which is, according to nutritionists, wanting in certain constituents essential to health'.[2] Caution would seem necessary, therefore, in introducing innovations, and in any case no one can force the people to eat proper food.

[1] Wickizer and Bennett, p. 188. [2] *African Survey*, pp. 1122, 1194.

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Yet in this matter, as in others, one may notice a growing tendency to use compulsion as a means of promoting welfare. Welfare is an attribute of social life and, for the common welfare, men living in society must accept restrictions on individual freedom. In tropical society they accept such restrictions in the name of custom, but welcome their removal under a policy of *laissez-faire*, allowing them at least the illusion of freedom. Welfare measures limit freedom. Men who value the common good voluntarily accept measures which they think likely to promote it. But in tropical dependencies, economic forces disintegrate society and foster a disregard for social welfare, while the people do not understand the measures that, rightly or wrongly, are expected to promote it. In such circumstances compulsion is attractive because it is easy to issue orders; but it is important to recognize the limits within which they can be enforced.

Compulsion may be *negative*, by penalizing breaches of regulations; that is the method typical of *laissez-faire* and the rule of law. Or compulsion may be *positive*, through pressure exercised to induce the people to adopt new habits, grow certain crops, eat special food and so on; that is the method typical of indirect rule through personal authority. The law, for example, may require that every house shall be provided with a latrine and, with an adequate and honest inspecting staff, and with a sufficient magistracy imposing deterrent penalties, such a law can be enforced. But it is impossible by legal methods to make the people use the latrines. The promotion of welfare through the law multiplies offences and administrative corruption. To make the people use the latrines is possible only by persuasion. And in this comparatively simple matter even the Dutch have failed. With a national tradition of public hygiene, and with the use of 'gentle pressure', on a scale almost beyond belief, through administrative machinery built up on customary authority and far more powerful than may be found in any British dependency, the death-rate in Java has remained almost constant during the last twenty years, 'having fluctuated around 1·9 % annually—about 1 % higher than in the Netherlands'.[1] In a recent brochure Dr Hydrick, of the Netherlands India Health Service, comparing the efficacy of curative medicine with the use of pressure and compulsion for improving hygiene, remarks that the provision of latrines is no more effective as propaganda for hygiene than the hospital as propaganda for western medicine. In a city compulsory hygiene may be possible and necessary, but he insists,

[1] Boeke, p. 163.

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with all the emphasis of italics, in rural areas '*the jails are not large enough to make the use of force possible*'. Moreover, coercion cannot give permanent results, and, after a failure due to the use of coercion, it is more difficult to secure the co-operation of the people. It should, he suggests, be used 'only to carry out measures which have already secured the support and the co-operation of at least 90 % of the people of that area'.[1] The use of gentle pressure to improve hygiene was a characteristic of the former Ethical policy in Netherlands India. But experience brought disillusionment. Modern British colonial policy follows the Dutch Ethical policy, in aiming to encourage hygiene by lavish expenditure on social services, and by recourse to legal compulsion or pressure. But compulsion in the interest of public health creates more problems, and more difficult problems, than it solves; the essential factor is human, not mechanical. Hygienic customs in the tropics have grown up slowly as a condition of survival in a tropical environment. Even so far as they suited the environment they reflected the general backwardness of tropical peoples, inviting European intervention which entailed the disintegration of tropical society and the collapse of social customs, good and bad alike. Many customs, indeed, that formerly were useful, now became harmful. Modern conditions require the observance of new restrictions on individual liberty. It is possible to enforce these so far as they are requisite to economic development, and the expenditure of funds on social services has done much to promote economic efficiency, though not to the full extent needed by economic progress. But that is very different from enhancing welfare, in which little can be done until the people themselves or their leaders are conscious of a need for betterment.[2] This change of attitude is usually expected to result from education.

4. Education: Types of Schools

In modern colonial policy few subjects have been so voluminously discussed as education. Apologists for colonial rule cite the expenditure on education as proof of its beneficence; critics complain that the expenditure is inadequate and that the methods of education are unsound. There is nothing new in this emphasis on education in tropical dependencies; it is an old tradition dating back to the Papal Bull of 1493. Education has always been regarded as a main instrument

[1] Hydrick, pp. 18ff.

[2] *African Survey*, p. 1206.